Russian Journal of General Chemistry 2001 vol.71 N8, pages 1176-1180

Electrochemical amination: IX.1 effectiveness of the process

Lisitsyn Y., Makarova O., Kargin Y.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Electrochemical amination of aromatic compounds with hydroxylamine in sulfuric acid in the presence of transition metal ions occurs by a chain mechanism. Electrolysis of the system Ti(IV)-NH2OH-C6H6 in 11 M H2SO4 and 5 M CH3COOH leads to formation of aniline and isomeric phenylenediamines with a total current yield of 137%. The role of acetic acid in the electrochemical process is not limited to aiding in solution of the aromatic compound. Acetic acid affects the mechanism of amination and can serve as one of the factors controlling the relative rate and selectivity of substitution.

http://dx.doi.org/10.1023/A:1013296206209